IN THE CLAIMS

1. A method for receiving an incoming signal having data bits spread by a spreading code, the method comprising:

segmenting a reception time period for said incoming signal into A time segments of about one-half a period for said data bits and B time segments of about one-half a period for said data bits, said A time segments alternating with said B time segments; and

integrating a representation of said incoming signal for said A time segments for determining A segment magnitude sets, respectively, and for said B time segments for determining B segment magnitude sets, respectively; said "A" segment magnitude sets having "A" segment magnitudes corresponding to code phases of said spreading code, respectively, and said "A" segments magnitude sets having "A" segment magnitudes corresponding to said code phases, respectively.

2. The method of claim 1, further comprising:

combining said A segment magnitude sets according to said code phases for providing an A combined magnitude set having A combined magnitudes corresponding to said code phases, respectively, and said B segment magnitude sets according to said code phases for providing a B combined magnitude set having B combined magnitudes corresponding to said code phases, respectively.

3. The method of claim 2, further comprising:

combining said A combined magnitude set with said B combined magnitude set according to said code phases for providing an AB combined magnitude set having AB combined magnitudes corresponding to said code phases, respectively.

4. The method of claim 2, further comprising:

acquiring said incoming signal at a particular one of said code phases based upon at least one of said A combined magnitudes and said B combined magnitudes.

5. The method of claim 4, wherein:

acquiring said incoming signal includes determining said particular phase corresponding to one of (i) a largest of said A and B combined magnitudes and (ii) a largest of a combination of said A and B combined magnitudes for said particular phase.

6. A method for receiving an incoming signal having data bits spread by a spreading code, the method comprising:

segmenting a reception time period for said incoming signal into A time segments and B time segments, said A time segments alternating with said B time segments;

integrating a representation of said incoming signal for said A time segments for determining A segment magnitude sets, respectively, and for said B time segments for determining B segment magnitude sets, respectively; said "A" segment magnitude sets having "A" segment magnitudes corresponding to code phases of said spreading code, respectively, and said "A" segments magnitude sets having

"A" segment magnitudes corresponding to said code phases, respectively; and

combining said A segment magnitude sets according to said code phases for providing an A combined magnitude set having A combined magnitudes corresponding to said code phases, respectively, and said B segment magnitude sets according to said code phases for providing a B combined magnitude set having B combined magnitudes corresponding to said code phases, respectively.

7. The method of claim 6, further comprising:

combining said A combined magnitude set with said B combined magnitude set according to said code phases for providing an AB combined magnitude set having AB combined magnitudes corresponding to said code phases, respectively.

8. The method of claim 6, further comprising:

acquiring said incoming signal at a particular one of said code phases based upon at least one of said A combined magnitudes, said B combined magnitudes, or a combination of said A combined magnitudes and said B combined magnitudes.

9. The method of claim 6, further comprising:

storing a representation of said incoming signal for providing a stored signal representation; and wherein:

integrating includes determining said A segment magnitude sets and said B segment magnitude sets from said stored signal representation.

10. The method of claim 6, wherein:

said A time segments are about one-half a time period for a one said data bits and said B time segments are about one-half a time period for a one of said data bits.

11. The method of claim 6, wherein:

said incoming signal is a global positioning system (GPS) signal.

12. A receiver for receiving an incoming spread spectrum signal having data bits spread by a spreading code, comprising:

an AB timer for segmenting a reception time period for said incoming signal into A time segments of about one-half a period for said data bits and B time segments of about one-half a period for said data bits, said A time segments alternating with said B time segments; and

a correlation machine for integrating a representation of said incoming signal for said A time segments for determining A segment magnitude sets, respectively, and for said B time segments for determining B segment magnitude sets, respectively; said "A" segment magnitude sets having "A" segment magnitudes corresponding to code phases of said spreading code, respectively, and said "A" segments magnitude sets having "A" segment magnitudes corresponding to said code phases, respectively.

13. The receiver of claim 11, further comprising:

an A combiner for combining said A segment magnitude sets according to said code phases for providing

an A combined magnitude set having A combined magnitudes corresponding to said code phases, respectively; and

a B combiner for combining said B segment magnitude sets according to said code phases for providing a B combined magnitude set having B combined magnitudes corresponding to said code phases, respectively.

14. The receiver of claim 13, further comprising:

an AB combiner for combining said A combined magnitude set with said B combined magnitude set according to said code phases for providing an AB combined magnitude set having AB combined magnitudes corresponding to said code phases, respectively.

15. The receiver of claim 13, further comprising:

an acquisition detector for using at least one of said A combined magnitudes and said B combined magnitudes for determining a particular one of said code phases for acquiring said incoming signal.

16. The receiver of claim 15, wherein:

the acquisition detector is further for determining said particular phase corresponding to one of (i) a largest of said A and B combined magnitudes and (ii) a largest of a combination of said A and B combined magnitudes for said particular phase.

17. A receiver for receiving an incoming spread spectrum signal having data bits spread by a spreading code, comprising:

an AB timer for segmenting a reception time period for said incoming signal into A time segments and B time segments, said A time segments alternating with said B time segments;

a correlation machine for integrating a representation of said incoming signal for said A time segments for determining A segment magnitude sets, respectively, and for said B time segments for determining B segment magnitude sets, respectively; said "A" segment magnitude sets having "A" segment magnitudes corresponding to code phases of said spreading code, respectively, and said "A" segments magnitude sets having "A" segment magnitudes corresponding to said code phases, respectively;

an A combiner for combining said A segment magnitude sets according to said code phases for providing an A combined magnitude set having A combined magnitudes corresponding to said code phases, respectively, and

a B combiner for combining said B segment magnitude sets according to said code phases for providing a B combined magnitude set having B combined magnitudes corresponding to said code phases, respectively.

18. The receiver of claim 17, further comprising:

an AB combiner for combining said A combined magnitude set with said B combined magnitude set according to said code phases for providing an AB combined magnitude set having AB combined magnitudes corresponding to said code phases, respectively.

19. The receiver of claim 17, further comprising:

an acquisition detector for using at least one of said A combined magnitudes, said B combined magnitudes, or a

combination of said A combined magnitudes and said B combined magnitudes for determining a particular one of said code phases for acquiring said incoming signal.

20. The receiver of claim 17, further comprising:

a signal memory for storing a representation of said incoming signal for providing a stored signal representation; and wherein:

the correlation machine determines said A segment magnitude sets and said B segment magnitude sets from said stored signal representation.

21. The receiver of claim 17, wherein:

said A time segments are about one-half a time period for a one said data bits and said B time segments are about one-half a time period for a one of said data bits.

22. The receiver of claim 17, wherein:

said incoming signal is a global positioning system (GPS) signal.

23. A method of acquiring a spread-spectrum signal having chips of a known code modulating data bits having a known period, the method comprising:

organizing time into alternating time segments A and B so that either the segments A or the segments B avoid data bit inversions;

performing A integrations of the signal in the segments A and combining the magnitudes of the A integrations to produce a combination A;

performing B integrations of the signal in the segments B and combining the magnitudes of the B integrations to produce a combination B; and

further processing at least the one of the combinations A and B having the greater magnitude.

24. A method of acquiring a spread-spectrum digital signal having chips of a known code but uncertain code phase modulating data bits having a known period, the method comprising:

(a) establishing alternating time segments A and B each equal to about half the bit period; then, on the basis of a first assumed code phase:

(b) correlating and integrating the signal separately for each of the segments A to produce respective A integrations;

(c) correlating and integrating the signal separately for each of the segments B to produce respective B integrations;

(d) squaring each of the A integrations to produce respective A squares;

(e) squaring each of the B integrations to produce respective B squares;

(f) summing the A squares to produce an A sum;

(g) summing the B squares to produce a B sum;

(h) comparing the A sum and the B sum or their sum to a threshold;

(i) if the threshold is exceeded, acquiring the signal on the basis of the first assumed code phase; and

(j) if the threshold is not exceeded, then, in one or more subsequent iterations, repeating steps (b) through (i) as necessary with a succession of different assumed code phases respectively substituted for the first assumed code phase until the threshold is exceeded.

25. A method of acquiring a spread-spectrum digital signal of uncertain Doppler shift having chips of a known code modulating data bits having a known period, the method comprising:

(a) establishing alternating time segments A and B each equal to about half the bit period; then, on the basis of a first assumed Doppler shift:

(b) correlating and integrating the signal separately for each of the segments A to produce respective A integrations;

(c) correlating and integrating the signal separately for each of the segments B to produce respective B integrations;

(d) squaring each of the A integrations to produce respective A squares;

(e) squaring each of the B integrations to produce respective B squares;

(f) summing the A squares to produce an A sum;

(g) summing the B squares to produce a B sum;

(h) comparing the A sum and the B sum or their sum to a threshold;

(i) if the threshold is exceeded, acquiring the signal on the basis of the first assumed Doppler shift; and

(j) if the threshold is not exceeded, then, in one or more subsequent iterations, repeating steps (b) through

(i) as necessary with a succession of different assumed Doppler shifts respectively substituted for the first assumed Doppler shift until the threshold is exceeded.

26. A method according to claim 25, wherein:

the signal has an uncertain Doppler shift; and

steps (b) through (i) are performed on the basis of a first combination of an assumed code phase and Doppler shift; and if the threshold is not exceeded, then, in one or more subsequent iterations, steps (b) through (i) are repeated as necessary with a succession of different combinations of an assumed code phase and Doppler shift respectively substituted for the first combination of an assumed code phase and Doppler shift until the threshold is exceeded.